

EXTINCTION EFFECTS DURING THE ASSESSMENT OF MULTIPLE PROBLEM BEHAVIORS

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Extinction effects were evaluated in a multiple baseline across behaviors design with 2 boys after just one of several target problem behaviors was observed during a functional analysis. Other target behaviors emerged as extinction was introduced sequentially across all problem behaviors. Results demonstrated an efficient strategy for simultaneously assessing multiple problem behaviors maintained by the same consequence.

DESCRIPTORS: extinction, functional analysis, response class hierarchy

Functional analysis has been effective in identifying the reinforcing contingencies that maintain problem behavior. However, complications may arise when multiple behaviors are assessed simultaneously in a functional analysis. Reinforcement of one behavior may preclude the occurrence of other behaviors that are maintained by the same reinforcer (i.e., members of the same response class), thus limiting our ability to identify functional relations in an efficient manner (e.g., Richman, Wacker, Asmus, Casey, & Andelman, 1999). Results of several studies indicated that placing one member of a response class on extinction increased the likelihood of other behaviors in the response class (Lalli, Mace, Wohn, & Livezey, 1995; Richman et al., 1999). In Richman et al., for example, more severe topographies of problem behavior did not occur during functional analyses until mild problem behaviors were exposed to extinction. We replicated and extended these previous studies

by using extinction to assess multiple problem behaviors when just one of several behaviors was observed during an initial functional analysis.

METHOD

Participants and Setting

Kyle, a 7-year-old boy who had been diagnosed with attention deficit hyperactivity disorder, took methylphenidate daily throughout the study. Trey, an 8-year-old boy who had been diagnosed with moderate mental retardation and profound hearing loss, wore a clonidine patch and took thioridazine daily throughout the study. Sessions were conducted at each participant's school in an unused classroom containing tables, chairs, desks, and materials necessary to conduct the experimental conditions. A video-camera hidden in a cardboard box recorded all sessions.

Response Measurement and Interobserver Agreement

Kyle's target behaviors were defined as (a) *out-of-seat*, no contact between the buttocks and the bottom of his assigned chair; (b) *yelling*, vocalization above normal conversational volume; (c) *inappropriate language or gestures*, threatening or derogatory verbalizations or gestural signs; and (d) *object destruction*, hitting, kicking, or throwing ob-

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jects. Trey's target behaviors were defined as (a) *object mouthing*, insertion of any inedible item into his mouth; (b) *object destruction*, hitting, kicking, or throwing objects; and (c) *aggression*, hitting or kicking others or throwing objects that made physical contact with others. Data were collected using 10-s partial-interval recording and expressed as percentage of intervals scored. Interobserver agreement data were collected for 30% of functional analysis and 30% of extinction sessions. Overall interval agreement averaged 88% for Kyle and 91% for Trey.

Procedure

Functional analysis. Participants were exposed to a series of functional analysis conditions, similar to those described by Iwata, Dorsey, Slifer, Bauman, and Richman (1982/1994). Three to five daily sessions were conducted with each participant, 5 days per week. All sessions lasted 10 min. A different therapist was associated with each condition, and the conditions were alternated in a multielement design. During the alone condition, the student was left in the room alone. During the attention condition, the therapist ignored the student but made statements describing the behavior following each occurrence of the target behaviors. These statements were also signed for Trey. During play sessions, the therapist interacted continuously with the participant but withdrew attention for 30 s contingent on each occurrence of a target behavior. During the demand condition, the therapist delivered a request (e.g., "Look at me") every 10 s, but left the room for 30 s contingent on a target behavior. In all conditions, consequences were delivered for any target behavior.

Extinction. Only one of the target behaviors was observed consistently during the functional analysis for each participant, and it was hypothesized that all target behaviors were members of the same response class. Thus, the functional analysis condition as-

sociated with the highest levels of problem behavior (i.e., demand condition for Kyle and attention condition for Trey) was continued while extinction was applied to the target behavior that occurred most frequently. For Kyle, the therapist no longer left the room contingent on the selected target behavior and continued to deliver requests every 10 s. For Trey, the therapist no longer delivered attention contingent on the selected target behavior. However, the reinforcing consequence (escape or attention) remained in place for the other target behaviors. When a substantial reduction in the selected target behavior was observed, extinction was implemented for the next most frequently occurring target behavior. In this manner, extinction was sequentially introduced across all target behaviors within a multiple baseline across behaviors design.

RESULTS AND DISCUSSION

The first six data points in Figure 1 for each target behavior show the levels of the behavior in the demand condition for Kyle and the attention condition for Trey. Few occurrences of the target behaviors were observed in other functional analysis conditions; thus, data collected during these conditions are not shown. Results of Kyle's functional analysis showed that out-of-seat behavior occurred almost exclusively during the demand condition, suggesting that this behavior was maintained by escape from demands. However, no other target behavior occurred during the functional analysis. Thus, out-of-seat behavior was placed on extinction in Session 10. The introduction of extinction for out-of-seat behavior was associated with an increase in yelling, inappropriate language and gestures, and destruction. The escape contingency was discontinued for yelling in Session 17, and further increases in inappropriate language and gestures and destruction occurred. In Session

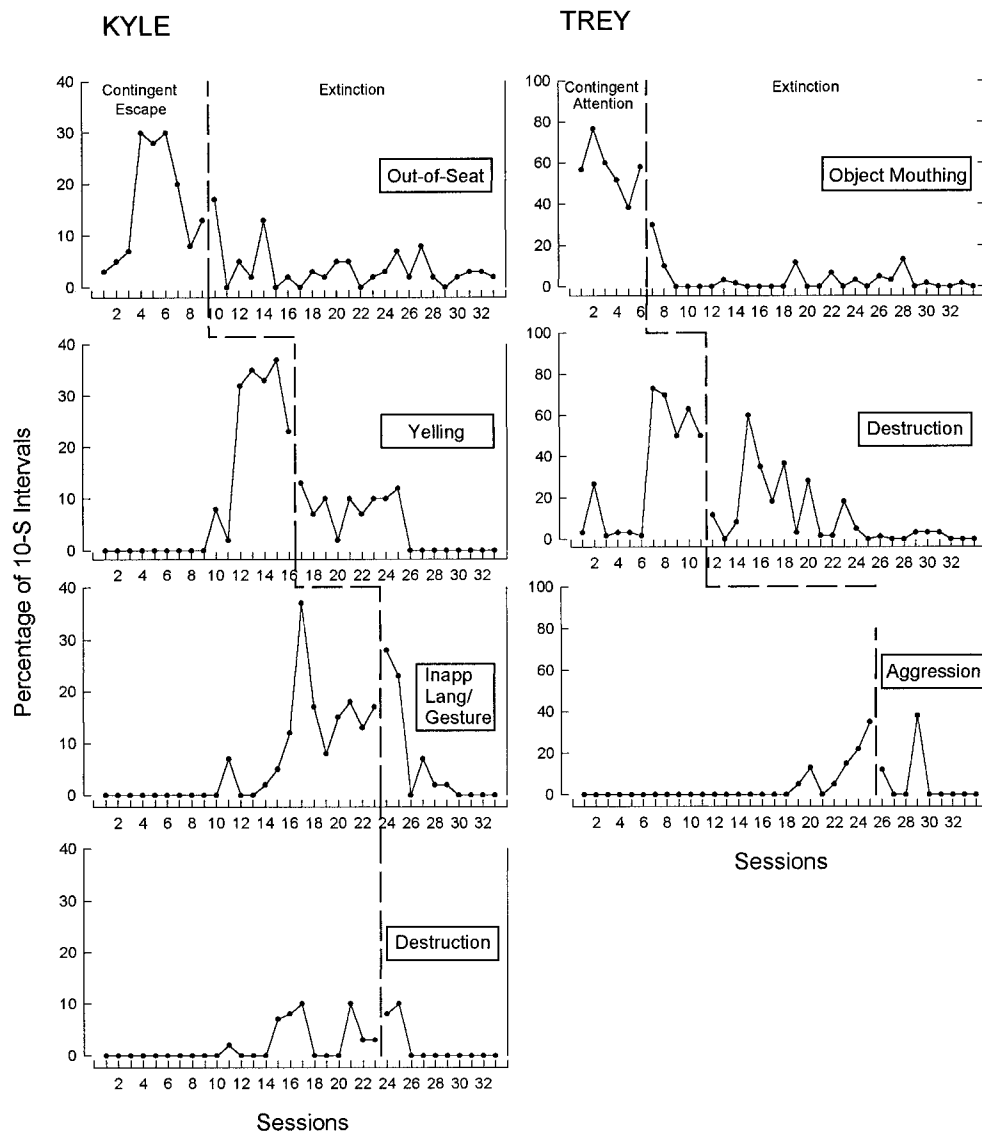


Figure 1. Percentage of 10-s intervals with problem behavior across sessions during the contingent escape (Kyle), contingent attention (Trey), and extinction conditions.

24, the escape contingency was discontinued for inappropriate language and gestures. Due to potentially dangerous outcomes, the escape contingency for destruction also was discontinued. Both behaviors decreased, and all target behaviors remained low during the last four sessions.

Results of Trey's functional analysis showed that mouthing occurred almost exclusively in the attention condition, indicat-

ing that mouthing was maintained by positive reinforcement. Aggression never occurred during the functional analysis, and destruction rarely occurred during any condition with the exception of one attention session. Thus, mouthing was placed on extinction in Session 7. Extinction produced a decrease in mouthing that was accompanied by an increase in destruction. After the attention contingency was discontinued for

destruction in Session 12, an increase in aggression was observed. Aggression decreased when contingent attention was discontinued in Session 26, and all target behaviors remained low during the last five sessions.

These findings, which are consistent with those of Lalli et al. (1995) and Richman et al. (1999), indicated that some target behaviors did not occur during functional analysis because reinforcement was delivered for multiple problem behaviors maintained by the same consequence. As extinction was introduced systematically across behaviors, all target behaviors eventually increased and were maintained when followed by the putative reinforcing consequence. It is possible that the behaviors of each participant constituted a response class hierarchy, in which more severe forms of problem behavior (e.g., aggression and disruption) did not occur because less severe forms of behavior in the response class (e.g., out-of-seat and object mouthing) produced reinforcement (e.g.,

Lalli et al., 1995). Thus, results suggest that the sequential application of extinction provides an efficient strategy for identifying response class hierarchies when assessing multiple problem behaviors in a functional analysis.

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